

Abstract of the Disclosure

Disclosed are the ATM communication apparatus and the bandwidth control method thereof that are capable of bandwidth control to guarantee the minimum cell rate and limit the upper-limit for each of subscriber terminals, dynamically and fairly distribute the shared bandwidth based on the register status and can be easily applied to the system that is already operating the actual service.

The ATM communication apparatus comprises: a traffic supervisory unit for supervising traffic situation of upstream ATM cells sent by a plurality of the optical network units 3-1 to 3-n; a bandwidth controller for judging an access bandwidth of each of the optical network units 3-1 to 3-n based on receiving bandwidth status and cell overflow situation of effective ATM cells transmitted by a plurality of the optical network units 3-1 to 3-n that the traffic supervisory unit detected and moreover according to a basic bandwidth and the upper-limit bandwidth set by the supervisory controller; a control table of permission to transmit an upstream cell for maintaining the access bandwidth judged by the bandwidth controller; a generator of permission to transmit an upstream cell for generating permission to transmit an upstream cell according to the access bandwidth judged by the bandwidth controller. The bandwidth controller comprises: a basic bandwidth assigner for assigning the basic bandwidth set from the supervisory controller; a shared bandwidth assigner for assigning a shared bandwidth based on the upper-limit bandwidth set from the supervisory controller and the receiving bandwidth and the cell overflow situation sent by the traffic supervisory unit; and a shared bandwidth memory for maintaining the assigned shared bandwidth.